Work Order ID 97934 \ March-01-13 1:51:06 PM

Page 1

Item ID:	D3183-9			Accept	*N900	0401	1 () (	)* s	etup Star	t *N:	S1*
Revision ID: Item Name: Start Date:	Cap 3/01/13	36 Start Qty: 60.00	*60	*	Cust Item I				Stop	*N:	S2*
Required Date Reference:	<b>::</b> 3/13/13	Req'd Qty: 60.00	*60	*	Customer:						
Approvals:	Process	Plan: ML5	Date: /3-03-	O' Tooling:	Da	nte:		R	tun Star	I/I	R1*
				,		ate:			Stop	` *N	R2*
Sequence ID/ Work Center I	ID	Operation Description		Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	]	Revision Nbr									
D3183		Rev C1						,			
100				0.00							
*100*		Hardinge CNC LATHE S	SMALL		St 13-0	2 -18		60	Ø		
Hardinge		Memo		0.00	297130	, , , ,					
Hardinge CNC Lat	the Small	Turn D3183	-9 Cap as per Folio FA2	388Deburr							
110		QC2- Inspect parts off m	achine FAI/FAIB	0.00							
*11 <b>0</b> *				0.00	ff13-0	18		60	Ø		
Quality Control		Memo		0.00	AJ 15-0	5-10					
Quality Condo											
120		QC8- Inspect parts - seco	ond check	0.00				/ *	þ	,	DAS
*120* QC Quality Control		Memo		0.00	3-3-18			60	¥ .		- \&\89 - \&\89

NCR:	Yes	1	No
INCIN.	103	1	140

DQA: Date:

NCR: Ye	,												
							•		QA Closed:	Date	:		
Work Ordei	r·			<u>-</u>	DISPOSITION			AGAINST DE	T DEPARTMENT/PROCESS				
ork oraci					Rework	1.	Skid-tube Crosstube		Water Jet		Engineering		
Part No	0.				Scrap	1	Machining	Small Fab	Pro	d. Eng. Coor.	Quality		
					Use-as-is	The	rmoforming	Finishing	Rec/Sto	re/Packaging	Other		
NCR No	0				Work Order Update		Large Fab	Composite		Supplier			
Root				Descri	ption of work order update	Initial	A	ction	Sign &				
Cause	Date	Step	Qty	<u> </u>	or Non-conformance	Chief En	g Des	cription	Date	Verification	QC Inspector		
Ooc/Data													
quip/Tooling													
Operator	_												
Material													
etup													
Other	_												
rocess													
upplier	_												
raining	_												
Inapproved						1							
						AULT CAT	EGORY			····			
Landin F					General				Ovalized	Г	Pressure/Forced		
-	Bending			,,	Bend Bend	Grain		-	Over/Under	taloranco	Temperature/Cure		
-	Centre N	ot Conce	ntric to (	J/S	BOM/Route	Hard		-	Part Incorre	F	Weld		
-	Cracks	/Ci		<u> </u>	Broken/Damaged	$\vdash$	ction Incomplete actions Incomplete	-/Uncloar	Part Income	<u> </u>	Wrong Stock Pulled		
}	Crushed/	crimped		-	Burrs Contamination	<b></b>	ictions incomplete Itenance	e/Officieal	Part Lost/Mi				
-	Cuffs			-	<b>-</b>	Misla		-	Positioned \				
-	Heat Tre		Tuba	-	Countersink	Misre		<del> </del>	Power Loss,		Other		
-	Inspection	•	rube	-	Cut Too Short Drill Holes	Offse		<u> </u>	Jrowei Loss,	Juige	Totalei		
-	Ripples in			_	<b>-</b>	$\vdash$	t of Calibration						
-	Torque V			`  -	Drawing	<b>}</b>	of Sequence						
-	Turning			-	Finish	_	•		-				
ł	Wave/Tv	vist in Tu	pe	1	Folio	Outs	de Dimensions						

Work Orde March-01-13 1.		934		*970	34*				Page 2
Item ID: Revision ID: Item Name:	D3183-9			Accept	*N9000401	INN*	Setup	Start Stop	*NS1* *NS2*
Nem Name: Start Date: Required Date: Reference:	3/01/13	Start Qty: 60.00 Req'd Qty: 60.00	*60* *60*		Cust Item ID: Customer:				
Approvals:		an:			Date:		Run	Start Stop	*NR1* *NR2*
Sequence ID/ Work Center I 130 *130* Packaging Packaging	D	Operation Description Identify as per dwg & Sto	ck Location:	Set Up/ Run Hours 0.00		Plan Accep Code Qty Ø×	ot Rej Qty		Reject Insp. Number Stamp  / 3 / 03 /
140 *140* QC		QC21- Final Inspection -	Work Order Release	0.00			hL J	13-	03-19

Quality Control

			DQA:	Date:
VCR:	Yes / No	WORK ORDER NON-CONFORMANCE / UPDATE		
			OV Closed:	Date:

										QA Closed.	Date	•
Work Orde	er:				DISPOSITION		AGAINST DEPARTMENT/PROCESS					
					Rework	7 I		Skid-tube	Crosstube	Water Jet		Engineering
Part i	No.				Scrap			Machining	Small Fab	Pro	d. Eng. Coor.	Quality
				· · · · · · · · · · · · · · · · · · ·	Use-as-is	1   .	Therm	noforming	Finishing	Rec/Sto	e/Packaging	Other
NCR f	No.				Work Order Update	1		Large Fab	Composite		Supplier	
						1						
Root				Descri	ption of work order update	lni	tial	A	ction	Sign &		
Cause	Date	Step	Qty	(	or Non-conformance	Chie	f Eng	Des	cription	Date	Verification	QC Inspector
Doc/Data												
Equip/Tooling											*	ļ
Operator		1										
Material												
Setup			]									
Other												
Process		İ										
Supplier												
Training												
Unapproved												
					F	AULT	CATE	GORY				
Landi	ng Gear		•		General							_
	Bendin	g			Bend	G	irain			Ovalized		Pressure/Forced
	Centre	Not Conce	ntric to (	o/s	BOM/Route	Пн	ardwa	re		Over/Under	tolerance	Temperature/Cure
	Cracks				Broken/Damaged	Ir	rspecti	ion Incomplete		Part Incorre	ct	Weld
	Crushe	d/Crimped	-		Burrs	Ir	nstruct	ions Incomplete	:/Unclear	Part Lost/M	issing	Wrong Stock Pulled
	Cuffs				Contamination	$\square$	/lainte	enance	·	Part Moved		
·	Heat Tr	reat			Countersink	$\square$	⁄lislabe	eled		Positioned \	Vrong	
	Inspect	ion Strip in	Tube		Cut Too Short	$\square$	/lisreac	d		Power Loss/	'Surge	Other
		in Bend			Drill Holes	По	ffset	,	<b>L</b>	<b>-</b>	_	
	$oldsymbol{oldsymbol{ ext{H}}}$	Waves in	Extrusion	,	Drawing	По	ot of (	Calibration				
	$\blacksquare$	g Sequence			Finish	По	out of S	Sequence		·		
	<del></del>	Twist in Tu			Folio	$\vdash$		Dimensions				

**Picklist Print** Page 1 March-01-13 1:51:05 PM Work Order ID: 97934 Parent Item: D3183-9 Required Date: 3/13/13 **Start Date:** 3/01/13 Cap Parent Item Name: **Start Qty:** 60.00 Required Qty: 60.00 **Comments:** IPP A 06.05.03 New issue KJ Component Item ID/ Replacement Mfg/ Qty per Kit Total Last Unit of Qty on Qty Status Bin Primary Route Date Item Name Item ID Measure Hand Purch Location Seq ID Issued Item Location Issued Qty MDELRINR1.000 100 No 20.3664 Purchased Delrin Round Bar 1" Loc Code Location Loc Qty MAT018 20.3664

0.814

7

12.5524

122582

117985 118392

2.427

DQA: \_\_\_\_\_ Date: \_\_\_\_

NCR: Y													
	•						<u> </u>		QA Closed:	Date	:		
Work Orde	ır.				DISPOSITION		AGAINST DEPARTMENT/PROCESS						
Work Orde					Rework	1 I	Skid-tube	Crosstube	]	Water Jet	Engineering		
Part N	lo.				Scrap	1	Machining	Small Fab	Pro	d. Eng. Coor.	Quality		
				<del></del>	Use-as-is	The	rmoforming	Finishing	Rec/Sto	e/Packaging	Other		
NCR No.				Work Order Update		Large Fab	Composite	]	Supplier				
Root				Descri	tion of work order update	Initial	Ac	ction	Sign &				
Cause	Date	Step	Qty		or Non-conformance	Chief E	g Desc	cription	Date	Verification	QC inspector		
Doc/Data													
Equip/Tooling													
Operator													
Material													
Setup							· i			ļ			
Other							:						
Process													
Supplier													
Training													
Unapproved									<u> </u>				
					F	AULT CA	regory	· · · · · · · · · · · · · · · · · · ·					
Landi	ng Gear				General			_	_	_	_		
	Bending				Bend	Grai	า		Ovalized		Pressure/Forced		
	Centre N	ot Conce	ntric to O	/s	BOM/Route	Hard	ware		Over/Under	tolerance	Temperature/Cure		
	Cracks				Broken/Damaged	Inspe	ction Incomplete		Part Incorre	ct	Weld		
	Crushed/	Crimped.			Burrs	Instr	uctions Incomplete	/Unclear	Part Lost/M	issing	Wrong Stock Pulled		
	Cuffs				Contamination	Mai	ntenance		Part Moved				
V	Heat Trea	at			Countersink	Misla	beled		Positioned \	Wrong	<del></del>		
	Inspectio	n Strip in	Tube		Cut Too Short	Misr	ead		Power Loss,	'Surge	Other		
	Ripples ir	n Bend			Drill Holes	Offse	t						
	; Torque V	Vaves in E	Extrusion		Drawing	Out	of Calibration						
	Turning S	Sequence			Finish	Out	of Sequence						
!	Wave/Tv	vist in Tul	be		Folio	Outs	ide Dimensions			_			

DART AEROSPACE LTD	Work Order:	97934
Description: Cap	Part Number:	D3183-9
Inspection Dwg: D3183 Rev: C1		Page 1 of 1

# FIRST ARTICLE INSPECTION CHECKLIST

X First Article	e Prototype
-----------------	-------------

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Ø0.830	+/-0.005	,830			51.08	Vein
Ø0.720	+/-0.002	.720			1	
Ø0.747	+/-0.001	.747				
R0.010	+/-0.010	.010	V,			
R0.031	+/-0.010	,031				
0.199	+/-0.001	.198	V			
0.276	+/-0.010	.278				
0.039	+/-0.010	.040			$\mathbb{V}$	
				·		
		,		***		
					-	
		:			1414.	
			600			
	00	<u>.</u>	12	,		

Measured by:

Date: 13-03-18

Audited by: 9-89

Prototype Approval: N/A

Date: \( \sqrt{3} - 3 - 7 \)

Date: \( \sqrt{3} - 3 - 7 \)

Date: \( \sqrt{3} - 3 - 7 \)

Rev	Date	Change	Revised by _	Approved
Α	04.04.20	0 New Issue (P/O D3183-045)	KJ/RF	1
В	06.03.09	9 Dimension Ø0.830 was Ø0.850	KJ/JLM	Cidl
				— <i>Y</i> ~~/

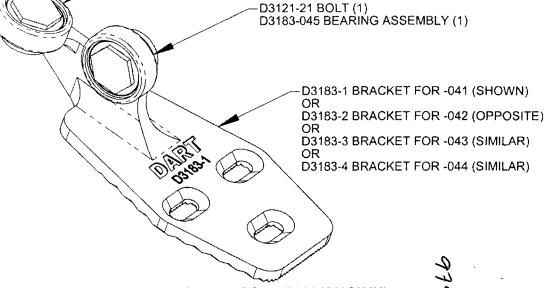




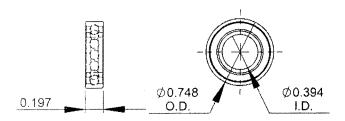
DESIG	#	DRAWN BY	DART AEROSPACE HAWKESBURY, ONTARIO, CAI				
CHECK	THE STATE OF THE S	APPROVED	DRAWING NO. D3183	REV. C			
DATE	04.0	2.17	BRACKET ASSEMBLY	SCALE 1:1			
 Α	0	3.01.24	NEW ISSUE				
В	0	3.06.17	REMOVE BEARING; 1.012 WS 0.88	32			
С	,0	4.02.17	ADD -045/-9; 0.182 WAS 0.431				

DEO ATTACHED

C1 4 1 04.11.09 0 830 WAS 0.850 D3121-21 BOLT (1) D3183-045 BEARING ASSEMBLY (1)

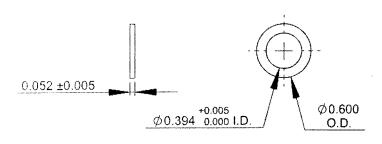


D3183-041 BRACKET ASSEMBLY (SHOWN) D3183-042 BRACKET ASSEMBLY (OPPOSITE) D3183-043 BRACKET ASSEMBLY (SIMILAR) D3183-044 BRACKET ASSEMBLY (SIMILAR)



## **D3183-5 BEARING:** SPECIFICATION CONTROL DRAWING

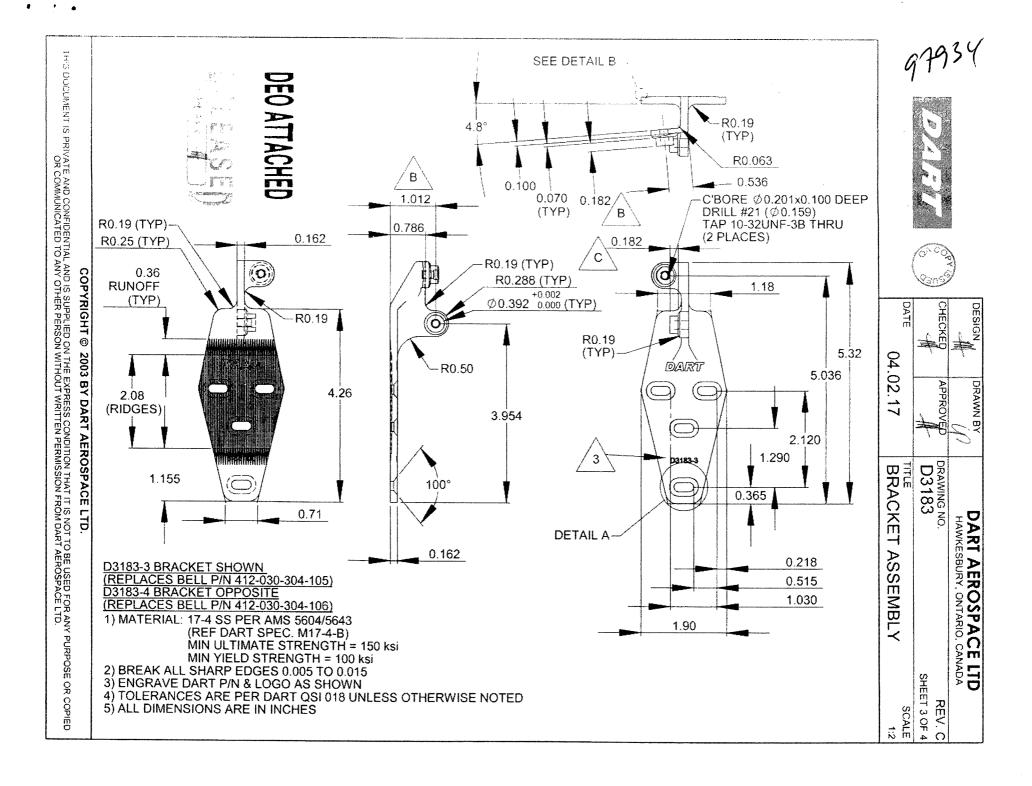
- 1) SINGLE ROW, DEEP GROOVE, CONRAD TYPE, SHIELDED
  2) POSSIBLE SUPPLIER: NSK P/N 6800ZZ
- 3) ALL DIMENSIONS ARE IN INCHES



#### **D3183-7 WASHER**

- 1) MATERIAL: AISI 303 ROUND BAR (M303R) **ANNEALED**
- 2) BREAK ALL SHARP EDGES 0.005 TO 0.010 3) TOLERANCES ARE PER DART QSI 018 **UNLESS OTHERWISE NOTED**
- 4) ALL DIMENSIONS ARE IN INCHES

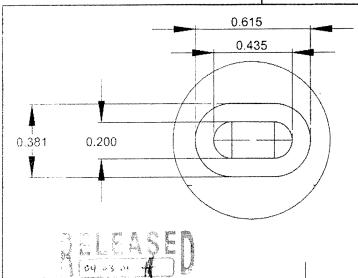
#### COPYRIGHT © 2003 BY DART AEROSPACE LTD.







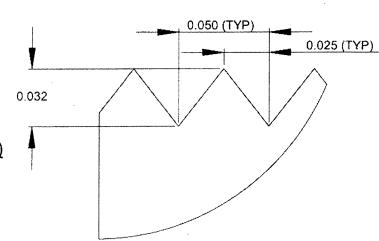
DESIGN	DRAWN BY	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA		
CHECKED	APPROVED	DRAWING NO.	REV. C SHEET 4 OF 4	
04.02.17		BRACKET ASSEMBLY	SCALE 1:1	

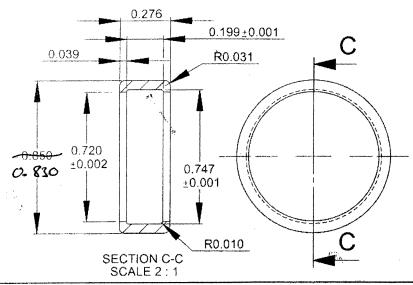


**DETAIL A (2:1)** 

DEO ATTACHED

**DETAIL B (20:1)** 





### D3183-9 CAP

- 1) MATERIAL: DELRIN ROD, Ø1.00 (REF DART SPEC. M-DELRIN-R1.00) 2) TOLERANCES ARE PER DART QSI 018
- **UNLESS OTHERWISE NOTED**
- 3) ALL DIMENSIONS ARE IN INCHES

### D3183-045 BEARING ASSEMBLY

1) ASSEMBLE D3183-5 BEARING AND D3183-9 CAP

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97934

DRAWING	NO TITLE		<del></del>			ŧ	1113
1			REV.C1	DART AEROSPACE	LTD D.E.O. NO.	SHEET NO.	SCALE
D3183	BRACK	ET ASSEMBLY		ENGINEERING ORD		SHEET 1 OF 1	NTS
DRAWN	apap	CHECKED		MFG. APPR.	APPROVED M	DE APPR.	
DATE	10.05.14	DATE	10.06.30	DATE (8.06.30	DATE 10/06/31)	DATE 10/06/30	

# **D3183-5 BEARING**

ADD POSSIBLE SUPPLIER: KML P/N 6800-ZZ

BASIC LOAD RATING REQUIREMENT:

Cr = 1720 N (386 lb) MIN [DYNAMIC]

Cor = 840 N (188 lb) MIN [STATIC]

**REF PAR 10-012** 



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